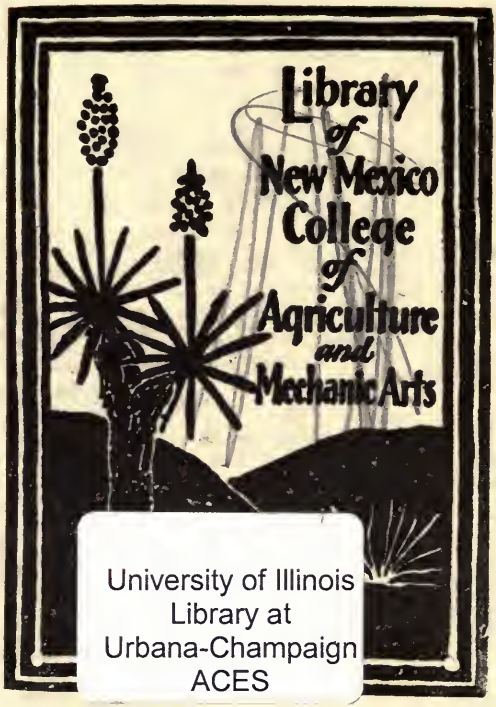

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Agricultural Experiment Station

BULLETIN No. 124

MARKETING THE MUSKMELON

By JOHN W. LLOYD

URBANA, ILLINOIS, APRIL, 1908

Summary of Bulletin No. 124

1. The leading type of muskmelon grown in Illinois for the general market is the Netted Gem, and the matter presented in this bulletin has special reference to the marketing of this type. Page 295

2. The one-third bushel climax basket is the standard package for Illinois melons, though other packages are sometimes used for odd sizes or for fancy stock. Page 295

3. Illinois gem melons intended for shipment to the Chicago market should, as a rule, be picked as soon as the fruit will part readily from the stem, but not before. Page 299

4. Well graded melons sell better than ungraded stock. Page 302

5. The quality of a melon is the primary factor which determines its grade. The relation between the netting of a melon and its quality, makes it possible to grade melons with extreme accuracy as to quality, on the basis of netting. Page 303

6. The full benefit of grading cannot be secured unless methods of packing are employed which will enable the melons to present an attractive appearance upon the market. Page 306

7. Different styles of pack should be adopted for melons of different sizes. Page 307

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9. To handle the melon crop properly, the working force must be thoroughly organized, and each person trained for his particular duty. Page 318

10. Melons may be shipped by express to the smaller cities, or by freight to the large cities, or sold to buyers at the shipping point. Page 319

11. The most satisfactory way of supplying melons to the smaller cities is to ship directly to one high-class retailer in each city. Page 320

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MARKETING THE MUSKMELON

By JOHN W. LLOYD, Assistant Chief in Olericulture

For several years the Illinois Agricultural Experiment Station has been making studies in reference to the marketing of muskmelons. The results of these studies are given in the present publication. After a brief consideration of the market demands in reference to types of melons and packages, the most approved method of handling the crop is given in detail, including picking, grading, packing, the construction of packing sheds, and the organization of the working force. This is followed by a discussion regarding various methods of selling the crop.

MARKET DEMANDS

While various types of muskmelon may be disposed of upon a local market, there are certain types which are recognized as standards in the large city markets; and it is seldom wise to attempt to force upon a general market a variety not recognized as a standard in that particular market. In the Chicago market the sorts most in demand are the Netted Gem, or Rocky Ford type, and the Osage;* and since Chicago is the leading market for Illinois melons, these two types would necessarily constitute a large proportion of the Illinois product. As a matter of fact, the Osage is not extensively grown in Illinois, so that nearly all the muskmelons produced in this State for the general market are of the Netted Gem type. The matter presented in this publication will, therefore, have special reference to the marketing of Gem melons.

Packages

Not only are certain varieties of melons recognized as standards, but it is also true that certain packages are recognized as standard for melons from a given region. For example, the market expects to handle Colorado melons in crates (12×12×22¼ inches, inside measure) containing 45 melons each, and Illinois melons in one-third bushel climax baskets. It is usually unwise to depart from

*In addition to these types, the Burrell Gem has recently created quite a sensation on the Chicago market; but since attempts to grow this variety in Illinois have thus far proved unsatisfactory, the marketing of this melon need not be considered here.

the standard package for the particular region except for the packing of odd sizes, and usually there is another package recognized in th market as suitable for such use. For example, the Rocky Ford pony crate (11×11×22¼ inches) containing 54 melons is well known in the market. The one-third bushel climax basket lends itself readily to the accommodation of melons of various sizes, yet it is occasionally more convenient to use some other package for the over-grown specimens of Illinois melons. The package used for this purpose will depend upon the packages that are available at the particular shipping point in question. In a tomato region, the four-basket flat, with the baskets removed, is sometimes used for packing the large melons. The inside dimensions of each compartment of the flat are 13×10¼×4⅜ inches. Six melons are packed in each compartment, and to fit snugly and make a neat package they must be approximately uniform in size and shape, averaging 4⅜ by 5⅛

FIG. 1. FLAT AND CRATE OF FANCY ILLINOIS MELONS.

inches. (See Fig. 1.) In regions from which summer apples are shipped in boxes, the extremely large melons are often packed in the "bushel" apple box. In other regions, the 50-pound rhubarb box is employed. Both these boxes have 11×11 inch heads. The

side slats of the apple box are 18 inches long, and those of the rhubarb box 22 inches.

In addition to the climax basket and the packages for odd sizes mentioned above, another package is used in Illinois to a limited extent. It is a slatted crate, 8×8×17 inches, inside measure, and accommodates sixteen melons averaging four inches wide by four and one-fourth inches long, and weighing approximately one and one-fourth pounds each. It is especially adapted for use in the packing of fancy stock, and such melons appear to much better advantage in a crate of this kind than in a basket. The chief objection

FIG. 2. FLAT AND CRATE OF FANCY MELONS, WITH COVERS ON, READY FOR SHIPMENT.

to the use of this crate is that it will accommodate only one size and shape of melon, and that Illinois melons do not grow uniformly to this shape and size. In a wet season they grow too large and in a dry season too small, so that it often occurs that only a small proportion of the crop can be packed in crates. This package is not yet appreciated on the market as fully as its merits warrant, but is destined to become popular with the better class of trade who desire to see the melons they purchase. It may in time become the standard package for fancy stock.

HANDLING THE CROP

Even if a standard variety of melon is grown and standard packages employed, unless the melons are handled in such a way as to reach the market in a condition acceptable to the trade, the best results in reference to prices and profits cannot be secured. The methods employed in the picking, grading and packing of the melons have an important influence upon their condition and appearance when they reach the market.

PICKING

There is considerable difference of opinion as to the exact stage of maturity at which melons should be picked for shipment. If allowed to become too ripe before picking, they become soft by the time they reach the market, and often must be sacrificed in order to effect an immediate sale. If picked too green, the melons reach market in firm condition, but are lacking in flavor, and are not desired by the best trade. It is a nice point to pick melons at such a degree of ripeness that they will reach the market in firm condition, and yet possess the requisite flavor. The farther from market the melons are produced, the less mature they must be when picked. Furthermore, the rapidity of softening after picking varies with the temperature to which the melons are subjected. The cooler they can be kept after picking, the longer they can be allowed to remain on the vines and the better flavor they will have. It is, therefore, essential that the melons be placed in the shade as soon as possible after picking, and be kept shaded until they are loaded into the car. For the same reason, riper melons can be shipped under refrigeration than in ventilated cars. It is also true that melons shipped during excessively hot weather, unless under refrigeration, will soften more rapidly than those shipped during cooler weather. The condition of the vines and the rapidity of ripening of the melons in the field will also have a bearing upon the stage of maturity at which they should be picked. Early in the shipping season, when the vines are in full vigor and the melons ripening slowly, the fruits may safely be left upon the vines until more mature than would be safe later in the season when the plants have become somewhat weakened, or, by reason of excessive heat, the melons are ripening very rapidly. Melons should not be picked at the same degree of maturity under different conditions of ripening, methods of transportation, and distances from market.

While it is true that no rule can be given for picking melons that will apply under all conditions, and that the grower must exercise judgment in reference to each day's picking, the ideal will be attained when the conditions are such that the melons will reach the market in the best condition if picked as soon as the fruit will part readily from the stem when the latter is pressed with the thumb or finger. There is a tendency among some growers to pick considerably before this point has been reached, in order to run no risk of the melons becoming soft in transit. In fact, some growers make a practice of picking the melons before a crack appears about the stem or any change of color takes place, even on the under side of the fruit.

In order to secure accurate data in reference to the influence of the time of picking upon the condition and quality of melons when they reach the consumer, five baskets of melons picked at different degrees of ripeness were shipped by freight from Anna to Chicago, a distance of 328 miles, then reshipped by express to a suburban town and there tested for condition and quality. Each basket was composed of specimens as uniform in ripeness as it was possible to secure them. The condition of the various lots at the time of picking was as follows:

No. 1. Over-ripe, yellow, not very firm.
No. 2. Slightly yellow, yet very firm.
No. 3. Gray. Picked as soon as stems would part readily from the melon.
No. 4. Green, with a slight tinge of yellow on under side. In only three of these melons was there any sign of a crack about the stem.
No. 5. Green. Well netted, but with no indication of change of color, even on under side, or crack about stem.

These melons were picked Monday forenoon, August 5, 1907, packed early in the afternoon, and loaded into a ventilated freight car about 4:00 P. M. They were consigned to a Chicago commission house, and reached the firm's store on South Water street at 10:00 A. M., Wednesday, August 7. Their condition at that time —the condition in which they would normally have been put on the general market—was as follows:

No. 1. Yellow; wilted.
No. 2. Yellow; slightly wilted.
No. 3. Slightly yellow; slightly wilted.
No. 4. Gray; slightly wilted.
No. 5. Gray; firm.

Nos. 1 and 2 were too soft and ripe except for local trade. No. 3 was said by the commission man to be in the most desirable

condition of all, and suitable for any trade, either local, suburban or shipping. Nos. 4 and 5 were in good condition for the shipping trade.

The conditions under which these melons were picked and handled were favorable to their reaching the market in good order, even though they were shipped without refrigeration; for the weather was comparatively cool for this season of the year. The official temperatures at Chicago for the three days these melons were enroute were as follows:

	Max.	Min.	Mean.
August 5	84	64	74
" 6	86	68	77
" 7	79	69	74

After examination on South Water street, these melons were reshipped by express to a suburban town twenty-two miles distant. There they were delivered by the express company at 5:00 P. M. At that time all were slightly more wilted, and Lots 3 and 4 were slightly more yellow in color, than at 10:00 A. M.

At 6:00 P. M. basket No. 1 was opened and unpacked. Three specimens in the bottom layer were mouldy and unfit for use. Five melons from the top layer were cut and tested at this time. The flesh was very soft. Three were of good flavor, one fair, and one poor.

After the removal of the melons mentioned, the rest of the melons in basket No. 1, together with the other four baskets, were placed in a cool cellar. This was at 6:00 P. M., Wednesday, August 7.

At 7 o'clock the following morning, *i. e.,* Thursday, August 8, two representative melons from each basket were cut and tested. This was the time at which the melons would normally have reached the consumer's table if they had gone without delay through the regular avenues of trade, instead of being kept under the control of the Experiment Station. The condition of the melons cut at this time was as follows:

Lot 1. Flesh soft and juicy; one of fine flavor, the other good but rather strong.

Lot 2. Flesh soft and juicy; one of fine and the other of good flavor.

Lot 3. Flesh in ideal condition, neither too soft nor too firm; both of fine flavor.

Lot 4. Flesh in practically same condition as Lot 3; flavor good but not so fine as Lot. 3.

Lot 5. Flesh firm; and of good flavor, but with a slightly green taste, especially in one of the specimens.

The rest of the melons from Lot 1 were cut during the day, Thursday. The flesh was soft or breaking down in every case, and the flavor inclined to be rather strong, though good. None were of fine flavor. The melons of the other four lots, with the exception of the two specimens from each lot previously tested, were examined and tested Thursday, Friday and Saturday. Lot 2 was tested at 11:00 A. M., Thursday, Lots 3 and 4 at 5:00 P. M., Friday, and Lot 5 at 6:00 A. M., Saturday. The results of these tests are given in Table 1, which indicates the number of melons in each lot which were found to be in each of the conditions specified, at the time the respective lots were tested.

TABLE 1.—CONDITION OF MELONS PICKED AT DIFFERENT DEGREES OF RIPENESS

Lot No.	2	3	4	5
Mouldy or otherwise unfit (too soft) for use	3	1		
Flesh beginning to break down:				
Flavor good	1	4	2	1
" strong, yet good	4	3	2	2
" fair			1	
Flesh in ideal condition:				
Flavor fine	5	4		1
" good	2	1	3	2
" good, but with a slightly green taste			3	
" fair				2
" fair, with a green taste			1	2
" poor				1
Flesh firm:				
Flavor fair				1
" fair, with a green taste				1
" poor, with a green taste				1
Flesh spongy and light colored; flavor poor				1
Total number of melons	15	13	12	15

These data show that under the conditions of this test, Lot 3 proved the most satisfactory, all things considered. In Lots 1 and 2, too many melons spoiled on account of over-ripeness. Although most of the melons in Lot 4 were of good flavor, they lacked the rich sweetness characteristic of the best specimens in Lots 2 and 3; while nine of the specimens in Lot 5 were so immature that they were not even "good" in flavor, and there was only one really fine flavored specimen in the entire lot.

This test fully substantiates the view of those who hold that to insure the best flavor, the proper time for picking gem melons in Illinois for shipment to the Chicago market is just as soon as the

melon will part readily from the stem, but not before. At this stage of maturity a crack has appeared about the stem, and the color of the melon has changed from green to gray, but usually has not become yellow, except on the under side of the fruit. Occasionally a melon will begin to turn yellow on the upper side before a crack appears at the stem. In that case, the melon should be picked, even if it is necessary to cut the stem.

While it is true that the melons will be of richer flavor if picked at the stage above indicated, it is sometimes advisable to pick them greener, especially in hot weather and at points where refrigerator cars cannot be secured. They are then surer to reach the market in good condition. However, it requires much more skill to pick melons before they will part readily from the stem, for there is always danger of cutting them too green. If they have not turned gray by the time they reach the market, the trade does not want them. A skillful picker can gather melons at the stage of ripeness indicated in Lot 4, and be sure of having them reach the market in presentable condition; but if an attempt is made to pick them any greener, or if a miscellaneous lot of ordinary hands is doing the picking, the results are likely to be very unsatisfactory.

In order that the melons may have any degree of uniformity in ripeness it is essential that the plantation be picked over every day; and at the height of the season, the ripening may be so rapid as to necessitate picking twice a day.

GRADING

The grading of melons is not a common practice in Illinois. The usual custom is to pack the entire crop indiscriminately, with the exception of the very poorest specimens, which are discarded as culls. This indiscriminate packing, resulting in lack of uniformity in the specimens in the same package, and in the contents of different packages shipped under the same brand, has made it impossible for the trade to handle the ordinary run of Illinois melons with any degree of certainty as to the quality of the stock. As long as this situation obtains, the highest prices cannot be realized.

That proper grading results in the securing of better prices than indiscriminate packing is evidenced by the experience of certain growers who have departed from the usual custom, and practice a regular system of grading whereby three distinct grades of marketable melons are made, and shipped under three different brands. Such a system of grading and branding makes it possible for the commission man to place the different grades with the different

classes of trade, instead of being obliged to sell the entire shipment as ungraded stock to undiscriminating purchasers. As a result, the best grade often brings double the price of ungraded stock on the same market, while the lowest grade usually sells for practically the same as ungraded stock, so that the excess in price received for the higher grades is practically all clear gain as a result of grading.

The quality of a melon is the primary factor which determines its grade, though size and condition are also to be considered. Extremely high quality and uniformity in size and condition are essential in the making of a fancy grade. The size must also be normal and the packing perfect. The No. 1 grade should be of nearly as high quality as the fancy grade, but may include odd sizes, though the different specimens in a given package should be fairly uniform in size. This grade may include melons too large or too small for the fancy grade. The No. 2 grade should consist of the balance of the salable melons. These should be of fair quality and far superior to the flavorless culls sometimes shipped by unscrupulous growers.

There is a close relation between the amount and character of netting and the quality of a melon, so that, after a little experience, it is possible to grade melons with extreme accuracy as to quality, on the basis of netting. As a rule, the denser and more fully developed the netting, the better the quality of the melon. The netting should stand out like whip-cords on melons graded as fancy stock. Well netted melons, in which the netting is not quite so prominent, together with off sizes of the best-netted melons, may be graded as No. 1. Specimens with still less netting, but in which the netting is fairly well developed, may be graded as No. 2. The extent to which the netting is developed is more important than the absolute amount of netting in determining whether a given specimen shall be graded as a No. 2 or a cull. Melons in which the netting is very poorly developed, as well as those without any netting, should be classed as culls. Cracked and over-ripe specimens must be graded as culls even though of fine quality, for they would be likely to spoil before reaching the consumer. Melons having the characteristic netting of the four grades above mentioned are illustrated in Figures 3 and 4. A careful study of these illustrations will aid the purchaser in selecting gem melons on the market, as well as the producer in grading them for the market.

The above considerations refer to the grading of melons from a plantation in which the vines are in a normal and vigorous condition. As the season advances and the vines become somewhat weak-

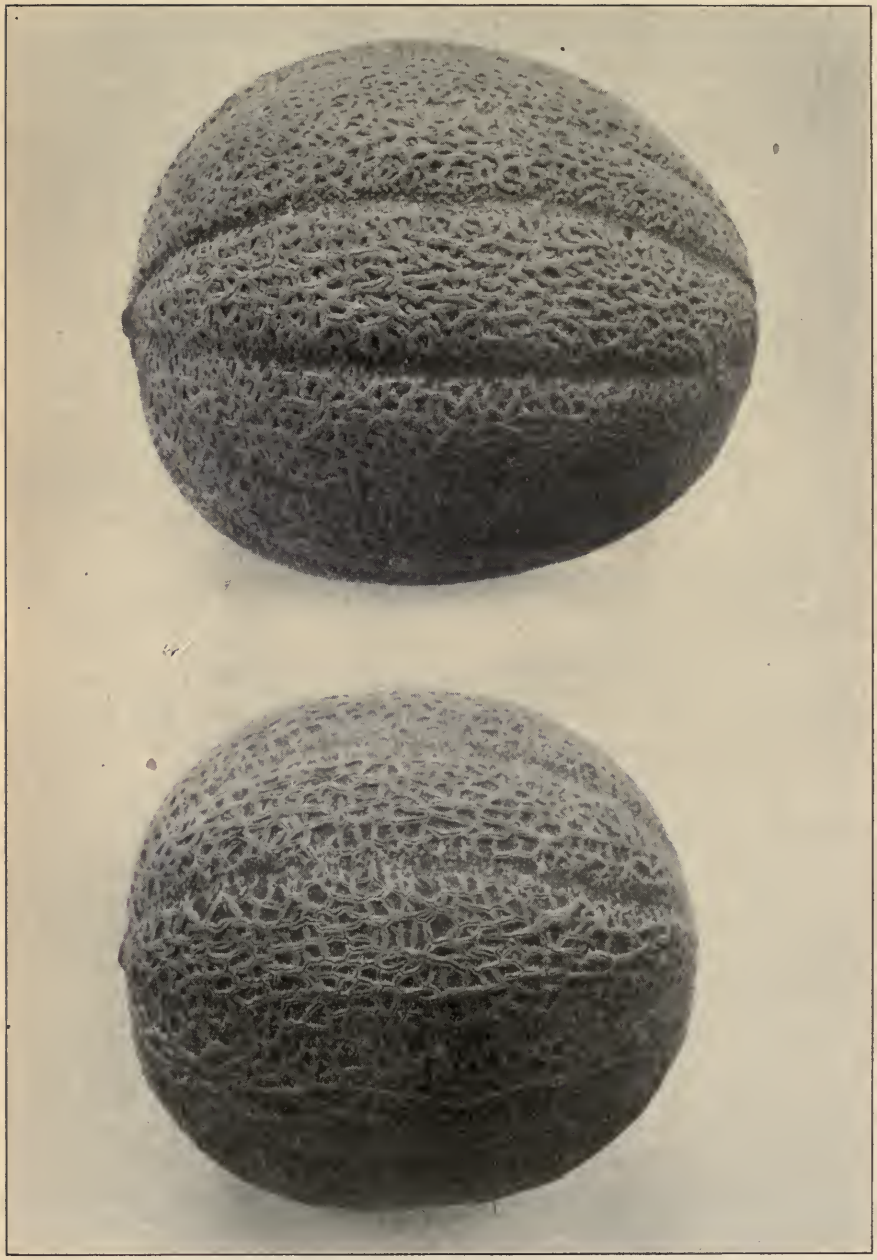

FIG. 3. FANCY MELON ABOVE; NO. 1 MELON BELOW.

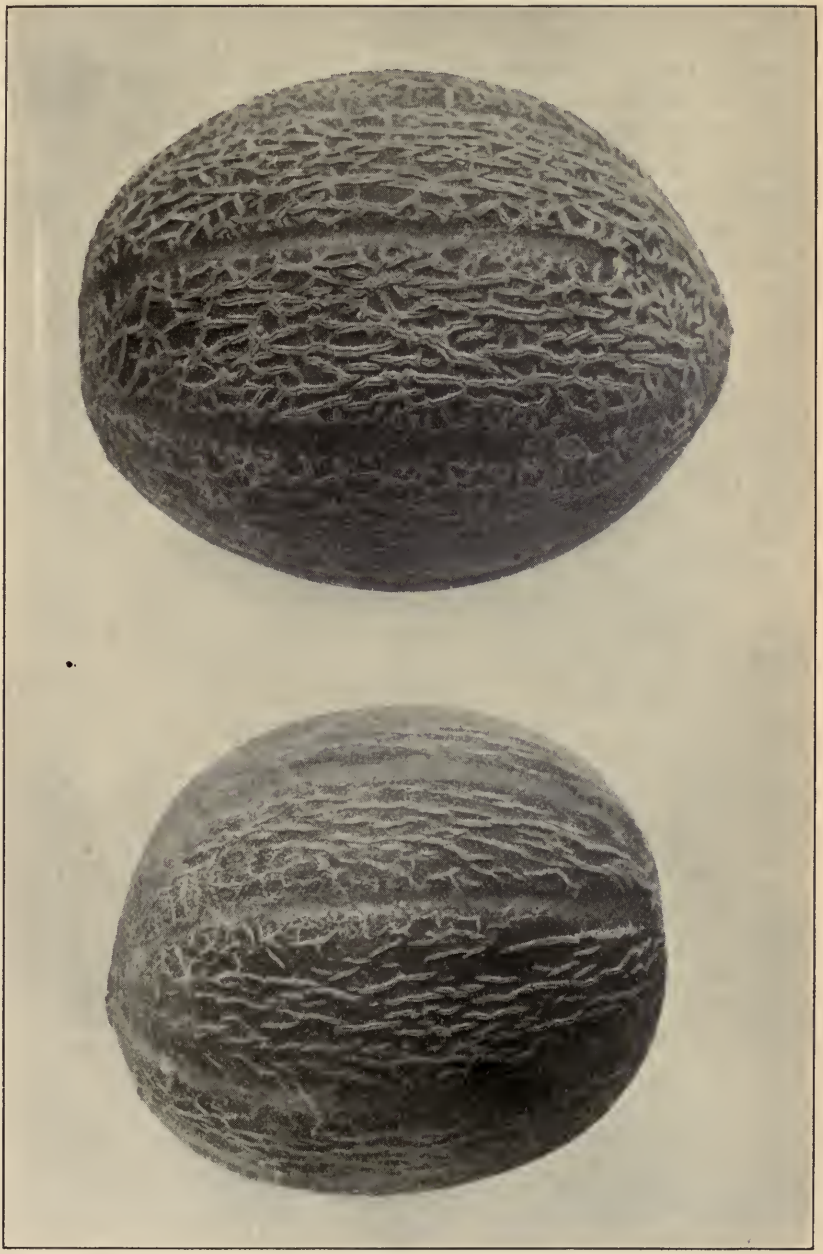

FIG. 4. NO. 2 MELON ABOVE; CULL MELON BELOW.

ened, more and more severe grading must be practiced, until finally it may become necessary to eliminate the No. 1 and fancy grades and ship only No. 2 stock. This stock will be much better netted than that shipped under the same brand earlier in the season on account of the more severe grading, and should be of fully as good quality. All through the shipping season, a few melons should be cut and tested each day, so that the basis of grading may be changed as the conditions warrant. In this way only can the grower be certain that he is shipping the same quality of melon under the same brand throughout the season.

PACKING

While the grading of melons as to quality is of extreme importance, the full benefit of such grading cannot be secured unless methods of packing are employed which will enable the melons to present an attractive appearance upon the market. This means that the melons in a given package must be fairly uniform in size, arranged in an attractive manner, and so packed that each specimen will remain in the exact position where it was placed by the packer. The packing must be tight, and yet the melons not bruised by being jammed into place.

Considerable difficulty is sometimes experienced by growers in packing melons of different sizes. Much of this difficulty can be avoided by grading the melons according to size as well as quality, and adopting different styles of pack to accommodate the different sizes. If this is done, nearly all sizes of gem melons can readily be packed in climax baskets.

Since the basket is larger at the top than at the bottom, two distinct sizes of melon must be used in the packing of each basket, though the difference between these two sizes should be as slight as is consistent with tight packing and the handling of the entire crop. The melons in each layer should be as uniform as possible in size and shape.

In handling the product of experimental plantations in 1906 and 1907, it has been found necessary to employ at various times the different styles of pack illustrated below. The basket used was of the following dimensions, inside measure:

Width of bottom, 6 inches.
Length at bottom, 16½ inches.
Width at top (packed), 7½ to 8½ inches.
Length at top, 18½ inches.
Depth (not including cover), 6¼ inches.

While the baskets made by different factories vary slightly in size and shape, this basket is fairly representative of the package commonly used for the shipment of gem melons in Illinois, and the styles of pack described can be employed with any of the standard makes of one-third bushel climax baskets.

The ideal pack for fancy basket melons, and the one for which this basket was built, consists of eight melons in each layer, those in the bottom being packed break-joint but touching their neighbors on all sides, and those in the top layer being straight across from one another. (See middle basket in Figures 5 and 6.) Melons

FIG. 5. PACKING MELONS OF DIFFERENT SIZES: BOTTOM LAYER IN THREE STYLES OF PACK.

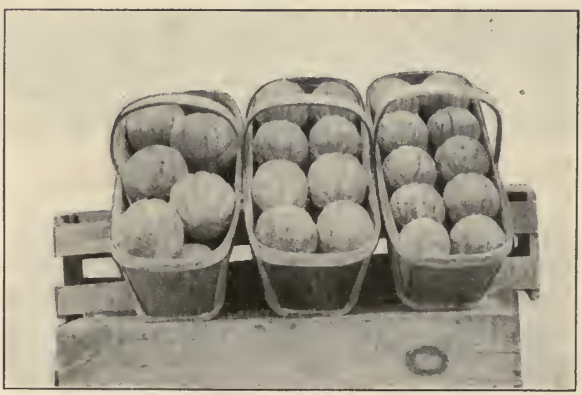

FIG. 6. TOP LAYER OF SAME BASKETS AS SHOWN IN FIG. 5.

measuring approximately 3½ by 4 inches and weighing from twelve to fourteen ounces each are the right size for the bottom layer. If the melons are rather long in proportion to their width only seven specimens will be required to fill the bottom layer. (See Fig. 7.) In this case the melons will be over four inches long and will weigh nearly one pound each. The melons in the top layer weigh about one and one-fourth pounds each, and measure approximately 4 by 4½ inches. When the melons grow to normal size, a

FIG. 7. BOTTOM LAYER CONSISTING OF SEVEN MELONS.

large proportion of the crop can be packed in this style, since all sizes between those mentioned can readily be handled, as well as some slightly larger, if care is taken in their distribution.

If the melons are short in proportion to their width, so that they are practically spherical or even slightly flattened, as is often the case early in the season, or in a dry season, it will require ten specimens instead of eight to fill the top of the basket, as is indicated in the basket at the right in Fig. 6. Specimens of this

shape, approximately four inches in diameter, weigh slightly less than one pound each.

Sometimes the early pickings include so many extremely small melons of good quality that it is necessary to introduce a style of pack for the bottom layer like that shown in the basket at the right in Fig. 5. These melons measure approximately 3⅛ by 3⅜ inches, and weigh about ten ounces each. It requires ten of them to cover the bottom of the basket, and they are the smallest size that should ever be shipped. This style of packing the bottom layer should not be employed in combination with a top layer containing less than ten melons. Otherwise the difference in size between the melons in the two layers would be too great.

For melons nearly spherical in form, but slightly too large for two specimens to be packed side by side in the top layer, a style of pack like that indicated at the right in Fig. 8 may be employed. There are eight melons in the top layer the same as in the middle basket in Fig. 6, but the style of pack is not so attractive. The bot-

FIG. 8. STYLES OF PACK FOR MELONS SLIGHTLY OVER-GROWN.

tom layer is packed the same as in the other case, and the melons in the top layer break joint with those below, so that the top of the package is practically no higher than in the other case, though the melons in the upper layer are larger.

If the melons are elongated rather than spherical, and slightly too large to be packed side by side in the top layer, this layer may consist of seven melons instead of eight. (See basket at left in Fig. 8.) In this case the bottom layer also should consist of

seven melons, and the specimens in the two layers break joint. The melons used in the top layer weigh nearly one and one-half pounds each and measure from 4¼ to 4⅜ by 4½ to 5 inches.

Specimens too large for the style of pack just described may be packed in the tops of baskets containing five melons in each layer, those in the top layer alternating with those at the bottom. (See Fig. 9 and also basket at left in Figures 5 and 6.) If the melons are broad in proportion to their length, there will be considerable space between the specimens, especially in the bottom layer (See Fig. 5), but each fruit is held tightly in place by pressure against its neighbors, and the melons in the upper layer rest in the spaces

FIG. 9. STYLE OF PACK FOR EXTRA LARGE SPECIMENS.

between those of the lower layer, so that although the melons are large they do not extend so far above the rim of the basket as to prevent putting on the cover. Melons weighing from one and three-fourths to two pounds and measuring from 4½ to 4¾ by 5 to 5½ inches can readily be worked into the top layer of this style of pack;

and since gem melons seldom attain a larger size, the introduction of this pack makes it possible to put up the entire crop in baskets if the grower so desires, and obviates the necessity of resorting to flats or boxes. The melons used for the bottom layer in this style of pack are of practically the same size as those employed in the top layer of the standard pack first described; and only so many specimens of this size are used in this style of pack as are necessary for the bottoms of enough baskets to take care of the over-grown specimens. This style of pack is not especially attractive, since the basket does not appear well filled, but is preferable to the mixing of large and extremely small melons in the same basket, and is the easiest way of handling the over-grown stock.

The relative proportion of the crop which can be packed in each of the different styles will vary from season to season, and at different times during the same season, and it may at times be necessary to introduce styles of pack other than those here described. Sometimes a small melon is introduced into the top layer to serve as a wedge to hold the other melons in place (See Fig. 10), but this should be avoided as far as possible.

In the above considerations it has been assumed that the entire crop is to be packed in baskets. If the fancy stock of suitable size

FIG. 10. BASKETS OF MELONS OF DIFFERENT GRADES: FANCY, NO. 2, AND CULLS.

is to be packed in the small crates previously mentioned, there will be a much smaller proportion of the standard 8 by 8 pack first described, for a large proportion of the specimens that could be used in the top layer would fit well in the crates.

Whatever style of pack or package is used, the appearance of the goods upon the market will be greatly enhanced if care is taken in the placing of each individual specimen in the package. Each melon should be placed upon its side, with its ribs extending lengthwise of the package and its most attractive side appearing uppermost, or where it will show to best advantage after the cover is placed upon the package. Ideal packing of strictly fancy stock is shown in the basket at the left in Fig. 10. The basket in the center shows well packed No. 2 stock, while the one at the right is a basket of culls, not intended for shipment. (See also Fig. 1.)

With fancy stock packed in baskets, it is best to use a two-slat cover, since this shows off the contents of the basket to the best advantage. For ungraded or No. 2 stock, many prefer a cover con-

FIG. 11. BASKETS OF MELONS WITH TWO-SLAT AND SINGLE-SLAT COVERS.

sisting of one broad top slat, so that a narrow strip along one side of each melon in the top layer is all that can be seen of the basket's contents. When this type of cover is employed, a skillful packer can put up No. 2 stock in such a manner that it makes a much better appearance than poorly packed No. 1 stock.

If the best results are to be secured, neatness should characterize not only the arrangement of the melons in the package, but also the package itself, the putting on of the cover and the stenciling for shipment. Rough or soiled packages should never be used for fancy stock, and preferably not even for No. 2. The covers should be put on straight, and the wires that hold them in place smoothly clinched. The stencil also should be put on straight, and at the same point on each and every package. Crates should be marked on both ends, and baskets on both the handle and the cover. In the stenciling, a proper amount of ink should be used, so that the marks are neither dim nor daubed. These items may seem trivial, but they all have an important bearing upon the appearance of the package and hence the salableness of the product.

THE PACKING SHED

Sometimes melons are packed from the ground in the open field or under the shade of a tree, but nearly all progressive growers provide a shed of some sort to protect both melons and packers from showers as well as sunshine, and to facilitate the packing. The shed is often only a temporary structure, since the melon patch is usually shifted to new ground each year. Its essential features are a packing bench or table, ample light and a roof that does not leak. It may or may not be boarded up at the back and sides. If not boarded up, it is usually provided with a curtain which may be shifted from one side to another as the day progresses. Often a canvas wagon cover is used for this purpose. Facilities for grading the melons are usually not provided, since the grading is not often practiced. However, the addition of a narrow shelf at the front of the shed is all that would be absolutely necessary for this purpose. The baskets as they come from the pickers are placed on this shelf and the melons sorted as they are transferred to the packing table. The table should be divided into bins to receive the different grades, and boxes provided for the culls. This arrangement leaves the sorter outside the shed and involves the facing of the shed to the north, to protect both sorter and melons from the sun. Even then the protection is not complete unless the roof boards extend considerably beyond the front of the shed. If roof boards fourteen feet

FIG. 12. PACKING SHED BOARDED UP AT BACK AND SIDES.

FIG. 13. SIMPLE PACKING SHED, WITH CURTAIN.

long are used for a shed ten feet wide, the protection will be fairly complete.

However, when the melons are coming in rapidly from the pickers, the narrow shelf soon becomes congested, and the baskets must be placed upon the ground behind the sorter. This necessitates his stooping to reach them and may leave part of the melons in the sun. To facilitate matters for the sorter, a bench may be provided on which to place the baskets of melons brought in from the pickers. This bench is the same height as the sorter's shelf, and extends the entire length of the shed. It is separated from the shelf by an alley two feet wide, in which the sorter stands. The filled baskets from the pickers are placed on the bench; the sorter shifts them to the shelf in front of him as needed, and when emptied drops them under the bench where they are readily accessible to those bringing in the filled baskets. Thus no time is lost and there is no accumulation of baskets about the sorter's feet.

If the outside posts supporting the bench are extended to a height of six or seven feet and connected by a cross-bar, it is easy to protect the unsorted melons from a sudden shower by dropping

FIG. 14. SHED ARRANGED FOR EXPEDITIOUS GRADING AND PACKING OF MELONS.

a wagon cover from the front of the roof, over this cross-bar. A shed built on this plan is shown in Fig. 14.

Instead of depending upon a canvas to protect the unsorted melons in case of a shower, and to provide more complete shelter for the sorter and melons at all times, the bench, together with the alley occupied by the sorter, may be covered by a board roof extending

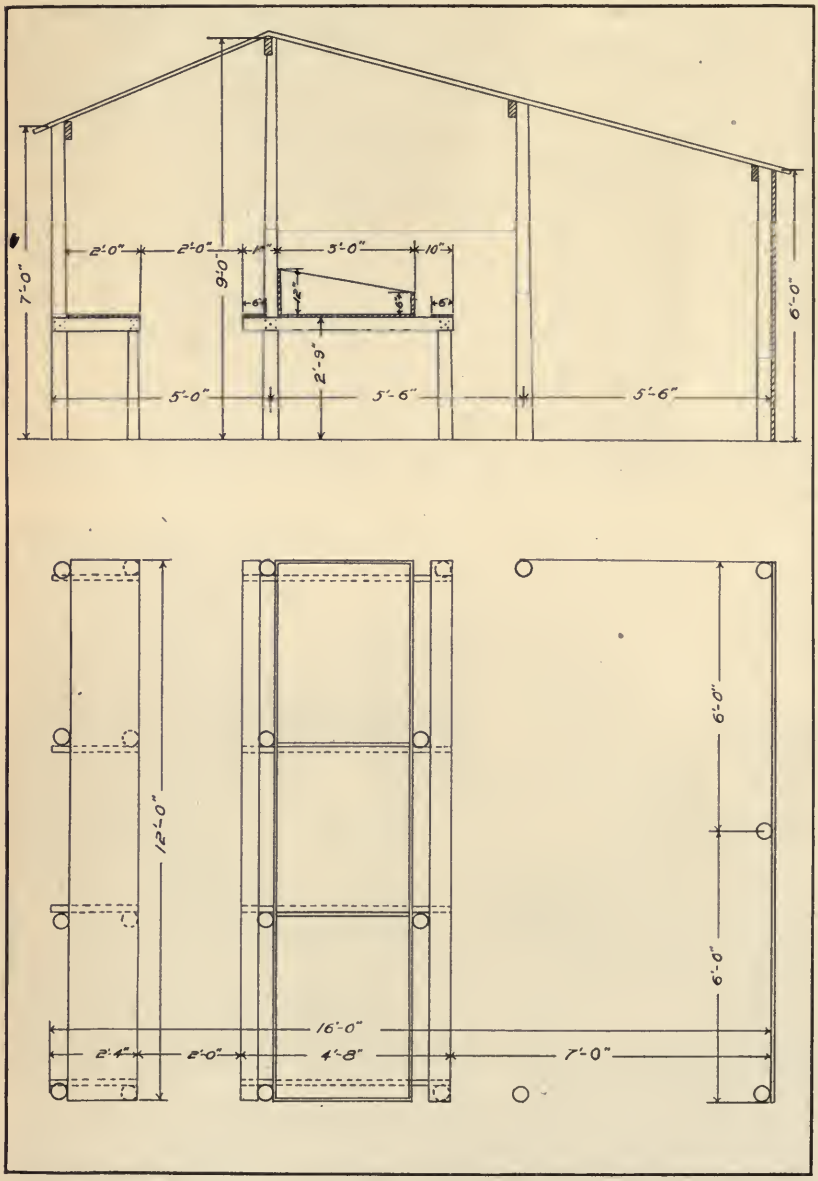

FIG. 15. SECTIONAL VIEW AND PLAN OF MELON PACKING SHED.

from the gable to the cross-bar. This makes a shed with a gable roof of unequal span, instead of a simple shed roof. A sectional view and plan of such a shed are presented in Fig. 15. The shed may be built of any length desired, depending upon the size of the crop to be handled. The one here illustrated is twelve by sixteen feet, and accommodates a working force of one sorter and either two or three packers, besides a boy to put on covers. There is sufficient room for stacking two wagon loads of packed melons.

For the sake of economy in the construction of a shed of this kind, the posts are usually cut from the timber, so that a comparatively small amount of sawed lumber is used in the frame. The posts are set deeply in the ground so that they will retain their position without much bracing.

For the construction of the shed here illustrated, besides nine long posts for supporting the roof and twelve short ones for the table and bench, the following bill of lumber would be needed:

4	2 x 4's, 12 ft., for supporting roof
4	2 x 4's, 4':8", for supporting packing table
4	2 x 4's, 2':4", for supporting receiving bench
24	boards 1"x 12", 12 ft., for roof, laid with 3 inch lap
6	" 1"x 12", 12 ft., for packing table and receiving bench
6	" 1"x 12", 12 ft., for boarding up south side
1	" 1"x 12", 12 ft., for partitions in packing table
2	" 1"x 6", 12 ft., for sorting and packing shelves
1	" 1"x 6", 12 ft., for front wall of table
2	" 1"x 6", 6 ft., for bracing ridgepole

The short two by four's for supporting the packing table and receiving bench could be sawed from two pieces each fourteen feet long. A summary of the bill of lumber would therefore be as follows:

4	2 x 4's, 12 ft.	32 board feet
2	2 x 4's, 14 ft.	19 " "
37	1"x12", 12 ft.	444 " "
4	1"x 6", 12 ft.	24 " "
	Total,	519 board feet

At $30.00 per M. this lumber would cost $15.57. This is a larger amount than is usually expended for material in the construction of a temporary shed; and if other sides were boarded up, the amount would be still greater. This type of shed is better suited to a location at the intersection of the boundaries of three or four fields which are to be used successively for the growing of melons than to an isolated field where melons are to be grown only one

season. For the last named situation it is probable that a shed like the one shown in Fig. 13 would be preferable. The lumber used in the construction of that particular shed was as follows:

3	2 x 4's, 12 ft., for supporting roof
3	2 x 4's, 5 ft., for supporting table
16	boards 1"x 12", 12 ft., for roof
3	" 1"x 12", 12 ft., for table
1	" 1"x 10", 12 ft., for back wall of table
4	" 1"x 6", 12 ft., for shelves, front wall and partitions of table

This lumber amounts to a total of 296 feet. At $30.00 per M. it would cost $8.88. This shed has facilities for grading, but does not fully protect the ungraded melons from the sun, and the space for stacking melons after packing is somewhat less than in the shed previously described.

Organization of the Working Force

Since the entire melon patch must be picked over each day, and since the melons must be shipped the day they are picked, it is essential that a larger force of workmen be maintained than would seem necessary to handle the crop early in the season when the picking is light. It invariably happens that at some time during the season the melons ripen very rapidly, so that a patch which has been yielding fifty to seventy-five baskets per day, may suddenly produce over two hundred; and unless the grower is prepared for such an emergency, some day he will have more melons than he can handle and will lose a large quantity on account of over-ripeness. To be prepared to handle the heavy pickings, the working force must be thoroughly organized early in the season, and while there is plenty of time, each person trained for his particular duty, so that when the inevitable rush does come, the entire force will be able to work at its maximum capacity.

The number of workmen needed would depend upon the size of the plantation and the quantity of melons to be handled. Ten persons can easily pick and pack two hundred baskets of melons in a half day, and do the work in a proper manner, provided the force has been well organized and trained, a suitable packing shed constructed and other facilities provided. The distribution of these workmen would be about as follows: Five pickers, who stay in the patch, and merely carry their filled baskets to the end of the row or to a driveway through the patch if the plantation is wide; one man to carry or haul the filled baskets to the shed, and keep

the pickers supplied with empty baskets; one sorter or grader, who holds the most responsible position on the force and must be an expert judge of melons; two packers; one boy to put on covers and stencil the packages ready for shipment.

With such a force in operation, the melons are removed to the shade of the shed immediately after picking, and are handled directly from the picking baskets to the packing table as they are sorted, so that they suffer no injury from repeated handling. A supply of empty baskets for the packers is kept under the packing table where they are within easy reach. The packer sets his filled baskets on the ground behind him where the "lidder" puts on the covers and stencils, and then stacks the baskets at the back of the shed.

As soon as the picking is finished, while the sorter and packers are completing their work, the head picker, who is usually the grower himself, checks over the stacks of baskets and makes out the shipping book, while the other pickers load the baskets into the wagons. One man does the loading, while the others pass him baskets like a bucket brigade. If train time is approaching, the wagons will be loaded by the time the last basket is packed. It then only remains to bind on the canvas cover to protect the melons from sun as well as hold the load in place, and the day's product is ready to start for the station.

The wagons used for hauling the melons should be equipped with bolster springs, unless regular market wagons are employed. The springs must be especially stout so that a full load may be hauled. One hundred baskets make a convenient load for handling in an ordinary double-box farm wagon, though 130 or even more can safely be put on if the load is properly roped.

SELLING THE CROP

After the melon crop has been carefully picked, graded and packed, success in its marketing is dependent upon placing the product in a market where it will be appreciated to such an extent that substantial evidence of this appreciation will reach the grower's pocket. Under existing conditions there are three general methods of marketing open to the Illinois grower: Shipping by express to commission men or retail dealers in the smaller cities, shipping by freight to commission men in large cities, and selling to local buyers at the shipping point.

Each of these methods has certain advantages, and any one may be superior to the others for a given grower, depending upon cir-

cumstances. If the grower is located where melons are not extensively grown for shipment, he must, perforce, ship by express, since there will be no facilities for the handling of perishable goods by freight. In that case, he will usually ship to the smaller cities, and let the shipping points that send out melons in carload lots supply the large city trade. Usually, melons consigned to commission men in the smaller cities do not sell for as high prices early in the season as those consigned to the large markets, but there is usually less fluctuation in price through the season, so that the average price received for the crop may be fully as great in a small market as in a large one. This is assuming that the small market would be able to handle the entire product, which is often not the case. The greatest objection to the small market is the ease with which it is overstocked. The prices may not drop as low as in a large market, but the goods simply cannot be moved. About the time the main crop at a shipping point in Southern Illinois is ready for market, the smaller cities to the north which may have been taking the earlier shipments at satisfactory prices, begin to be supplied with home-grown stock, and when this becomes plentiful the stock shipped in from other points is usually not wanted at any price. The grower who has been depending upon this kind of a market then suddenly finds himself confronted with the problem of seeking another outlet for his goods.

Another serious defect in the wholesale markets handling goods on consignment in the smaller cities, is that no premium is placed upon superior goods, No. 2 and ungraded stock usually bringing the same price as a strictly fancy article. There is no incentive to proper grading and packing for such a market.

The most satisfactory way of supplying melons to the markets of the smaller cities is to arrange with one high-class retailer in each city, to handle a certain number of packages of a given grade each day through the shipping season. In this case, each shipment of melons is usually billed out at a price set by the grower rather than the dealer. In this way it is often possible to build up a very satisfactory trade in high grade melons. The most serious drawback to this method of marketing is the impossibility of determining the number of packages that can be furnished per day, and hence the necessity of limiting orders to the supply that can normally be furnished. This makes it necessary to find some other way of marketing part of the crop. When the pickings are heavy, the surplus is usually consigned to some commission man located in a small city other than those in which a retail dealer is being supplied.

Since transportation by express is always expensive, most of the growers located at points where melons are shipped in quantity send their goods by freight to a large city market rather than by express to the smaller markets. At each shipping point there is usually an organization of the growers, which makes possible the securing of better railway rates and accommodations than would be the case where the growers are working independently, and provides for the loading of the cars, and other matters connected with the shipping of the goods. These are the chief functions of the organization as operated in Illinois, for the interests of the various growers are not pooled. Each grower consigns his melons to any commission house he may select in the city to which cars are being shipped. Each lot of melons retains its identity upon the market, and returns are made directly to each grower for his own melons. The grower is thus directly dependent upon his own commission man for the prices he will receive for his goods.

The prices secured by different commission men for the same class of melons on the same market the same day differ widely. Some growers change commission men frequently, in the hope of securing higher prices; but such results seldom follow, especially when the market is well supplied, for at such a time any good commission man will first take care of the melons from his regular shippers, and sacrifice if necessary those received from spasmodic shippers. Other growers divide each day's shipment among two or three firms in the hope of getting high prices for part of the goods each day. The proportion shipped to each man on a given day is usually determined by his latest returns, and the man who secured the best prices one day, may secure the lowest, three days later, so that on the entire season's business, little or nothing is gained by dividing shipments, and often much is lost. The safest plan to follow in shipping melons to a large city market is for the grower to make arrangements with some trustworthy commission firm to handle his entire product. This should be done before the shipping season begins. If the grower can visit the market and talk personally with his commission man, much will be gained. There should be a specific understanding between the grower and the commission man regarding the grading and packing of the melons, and the meaning of the different brands to be used on the packages, so that the salesman may know with absolute certainty the exact character of the goods contained in a given package. This will enable him to place the different grades with the different classes of trade, and thus realize for the grower the largest possible proceeds from the entire product.

If this method is followed, and the same grades of melons are shipped under the same brands to the same firm, year after year, the reputation of the goods will soon be established, and there will be a distinct demand for them at prices considerably in advance of those received for the same grades of melons shipped indiscriminately to various dealers.

If the nature of the growers' organizations in Illinois were such that provisions were made for a definite system of grading, and rigid inspection, so that the entire output of an association could be shipped under a few brands, and each brand guaranteed to be uniform in grade and packing, it would be possible for the association as a whole to establish a reputation, as above suggested for the individual grower who grades and packs his melons properly.

The third method of marketing—selling to a local buyer—has in its favor the fact that the grower knows what he is to receive before relinquishing control of the goods, but is objectionable in that the prices are based on the market for ordinary or inferior grades and practically no advance over these prices is paid for fancy goods. The man who grows good melons and grades and packs them properly can realize much higher prices by regularly shipping them to a good commission man in a large city as above outlined than by selling them to a local buyer.

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